MONTHLY REPORT

ON

THE PROGRESS OF THERAPEUTICS.

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BY

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REPORT ON THE PROGRESS OF THERAPEUTICS.

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(*Reprinted from the Edinburgh Medical Journal for October and November* 1876.)

Opium.—(*a.*) *In Psychoses.*—An account of Nasse's experience of the treatment of psychoses by opium is given in the *Allgemeine Zeitschrift für Psychiatrie*, Bd. xxxii. Heft 3, 4. Nasse does not coincide in the general opinion that opium in large doses is only useful in melancholia and not in mania. Out of 70 melancholics only 6 were cured, while of 76 cases of mania 22 were cured. Fourteen cases of delusional insanity were so treated without benefit. Nasse condemns the administration of opium in the first few months of mania; but he regards it as beneficial in cases of chronic mania of from four to seven months' standing when the maniacal symptoms, with sleeplessness, excitability, emaciation, and anæmia, persist and threaten exhaustion, but in which there is no organic disease. In melancholia often, and in mania less frequently, temporary improvement took place, but ceased when the administration of the opium was discontinued. The treatment advocated consists in giving two grains of opium twice daily, and rapidly increasing the dose. The usual quantity given in the twenty-four hours was from four to eight grains, but this was sometimes greatly exceeded. When improvement in the symptoms was noticed the increase in the dosage was stopped. The treatment was continued from two to eight weeks or more. When it was intended to discontinue the opium the dose was gradually diminished. The following symptoms frequently presented themselves during this treatment:—Nausea and constipation, at first followed by diarrhœa, diminished pulse, itching and burning of the skin, decrease in the weight of the body. Nasse does not regard hyperæmia of the brain, organic cardiac disease, or atheroma as contra-indicating opium. He believes the beneficial

results attending its administration to be due chiefly to its sleep-producing properties, to the narrowing of the vessels, and retardation of the circulation. He also ascribes to opium a tonic effect on the brain, and an indirect influence on nutrition.

(*b.*) *Opium Poisoning.*—In a discussion on opium poisoning at a recent meeting of the New York Medical Society, in which Dr Andrew H. Smith, Dr J. J. Reid, Dr Baylis, and others took part, the following points were specially noted :—The number of respirations is not always an index of the degree of narcosis. The narcotic influence is exerted partly by pressure on the brain from paralysis of the vaso-motor nerves, and partly by the direct influence of the drug on the cells of the brain. The effect of opium in contracting the pupil is due to its central action on the nerve-supply of the pupil; belladonna, on the other hand, acts on the periphery of the nerves. The administration of oxygen gas has proved of great service in opium poisoning; it accelerates the capillary circulation, and probably aids in the destructive assimilation of the poison. A dose of atropia as an antidote larger than 1-40th to 1-30th of a grain hypodermically is attended with risk.

In a clinical lecture delivered by Professor H. C. Wood (*Phil. Med. Times*, 25th December 1875), on the subject of opium poisoning, he states that he does not regard opium and atropia as antagonistic, and that atropia should be employed in opium poisoning not as an antidote, but as a powerful stimulant to the respiratory centres. The effect of atropia on the number of the respirations, and not the dilatation of the pupils, should be our guide as to the amount to be given. In the third stage of poisoning—that of coma and exhaustion with profound stupor, rapid feeble pulse, distant and stertorous breathing, moist and cool skin, and contracted or dilated pupils—alcohol should be used with freedom to maintain the circulation, atropia being also employed for its cardiac as well as for its respiratory stimulant action. Artificial respiration should not be put off too long, and Dr Wood prefers Sylvester's plan.

Datura.—As regards the mydriatic action of daturine, the following are the conclusions arrived at by Dr Fano from a large number of cases :—With a solution of one part of daturine in 3000, dilatation of the pupil of a healthy eye is obtained in from twenty to twenty-five minutes. The action of daturine is as prompt as that of atropine, the solutions employed being of equal strength. If, in vasculo-plastic keratitis, accompanied by a non-dilatable state of the pupil, daturine be inefficacious in producing dilatation, atropine will also prove ineffective; but daturine sometimes produces dilatation when atropine has failed to do so. If a collyrium of daturine will not produce dilatation of the pupil in certain cases of vasculo-plastic keratitis in which the mydriatic effect of atropine is also not appreciable, the daturine nevertheless seems to exercise a special action over the vessels of the cornea, these diminishing in size under its

influence; daturine collyria, therefore, are superior to atropine in certain cases of chronic and vasculo-plastic keratitis.—*Jl. d' Oculistique*, Sept. 1875.

Surgeon R. C. Sanders records two cases of datura poisoning, which are interesting from the fact that the post-mortem appearances in each case were exactly similar. The most marked venous congestion extended from the lips along the larynx and trachea to the bifurcations of the bronchial tubes. The congestion was uniform in its whole extent, but did not run down the œsophagus.—*Indian Medical Gazette,* 1st June 1875.

Salicine and Salicylic Acid.—Professor Senator finds that salicine given in doses of from 2½ to 6 grammes lessens the temperature in some febrile diseases as certainly as does salicylic acid. According to Ranke, Lehmann, and others, the acid is converted into salicine in the blood. Salicylate of ammonia is recommended by Dr Martenson of St Petersburg as a substitute for salicylic acid. It is easily soluble in water and alcohol, and has a sweet taste. It may be made by saturating an aqueous emulsion of the acid with ammonia or carbonate of ammonia.—*Centralblatt Med. Wiss.*, No. 14, 1876.

In an interesting article in the *Practitioner* for June on "Febrifuges," by Professor Binz, the mode of action of salicylic acid and of salicylate of soda is very fully considered. During the past few months very abundant evidence has been brought forward to demonstrate the value of salicine and salicylic acid as remedial agents in acute rheumatism. In the *British Medical Journal*, 3d June, Dr Hugh B. Brew records a case of rheumatic fever which he treated successfully with salicine in doses of 12 grains at first, and subsequently 15 grains every third hour. In the same journal Dr G. T. Schofield relates that he has treated thirteen typical cases of rheumatic fever with salicine, and has found in almost every instance very rapid abatement of the symptoms and quick recovery from the disease. He gives details of two cases so treated. He gave the medicine in doses of 15 or 30 grains, according to the age of the patient and the severity of the symptoms. With regard to its mode of administration, he finds that patients take it best in a small quantity of milk. In the *Lancet* for 1st July, the almost specific power which salicine seems to possess of arresting the course of certain cases of acute rheumatism with high temperature is well exemplified by a case, under the care of Dr Ralfe, in the Seamen's Hospital, Greenwich. The salicine was given in doses of 10 grains every half-hour. In the *British Medical Journal*, 8th July, Mr J. Pollard records a severe case of rheumatic fever which he treated successfully with salicine in 10-grain doses every third hour. When the medicine had been temporarily discontinued the pain and swelling in the joints recurred, and the temperature rose, but these symptoms gave way almost immediately on resuming the administration

of the salicine. According to a letter addressed by Mr F. Ensor, Surgeon to the Provincial Hospital, Port Elizabeth, to Dr Maclagan, and published in the *Lancet*, 17th June, a decoction of willow-tops has long been a favourite remedy for rheumatic fever among the Hottentots of South Africa.

In the *Lancet* for 20th May, two cases of rheumatic fever, under the care of Dr Sieveking, are recorded as having been treated successfully with salicylic acid in the wards of St Mary's Hospital. The medicine was given in 20-grain doses hourly for six hours. In the same journal for 1st July, four additional cases similarly treated by the same physician are reported. In the *Lancet* for 3d June, Dr Walter Fergus also relates several cases of acute rheumatism which he treated successfully with salicylic acid. He finds it best to dissolve the acid (as advised by Reiss) in spirit of wine, and then to add glycerine to about half of the bulk of the mixture; a drachm of concentrated aqua carui removes all disagreeable taste, and Dr Fergus states that no burning of the throat is complained of in the use of this formula.

In the *Canada Medical and Surgical Journal*, August, a case of acute rheumatism successfully treated by the acid is given by Dr H. C. Burritt. In this case the disease was arrested in less than twenty-four hours from the time of the administration of the acid with about 80 grains, and completely annihilated in four days with about 220 grains.

Dr Katz records the successful treatment of a case of acute rheumatism by salicylic acid in 15-grain doses hourly. Nitrate of potash, quinine, and morphia had been given previously for ten days without affording relief. Forty-eight hours after the commencement of the treatment by salicylic acid the patient was out of bed and could walk without assistance.—*Deutsche Medicinische Wochenschrift*, No. 4, 1876. In another case Dr Hildebrandt gave successfully 4 grains of the acid in fennel water every hour.—*Deutsche Med. Wochenschrift*, No. 7, 1876. Dr Stenitz has also administered salicylic acid with success in several cases of acute rheumatism. He gives the acid in doses of about 7½ grains hourly. —*Allgemeine Medicin Central-Zeitung*, 4th March 1876. The acid has also been given with success by Dr Zeuffell (*Wurtemburg Med. Correspond-Blatt*, No. 5, 1876), and by Dr Putnam (*Boston Med. Surg. Jl.*, 24th Feb. 1876), and others.

In the *British Medical Journal*, 17th June, Dr Talfourd Jones relates a case of acute rheumatism which yielded rapidly under the influence of the soda salt. In the first twenty-four hours of treatment the patient took eight doses of 30 grains each. In the succeeding period of twenty-four hours he took six doses of 20 grains; in the third period he had three doses of 20 grains; and during the fourth period he had two doses of 20 grains. Altogether in four days he had 450 grains. On the second day of treatment, after taking the seventh dose, the patient was absolutely free from

pain. The temperature fell within twenty-four hours from 101·2° to 99·8°; in the next period to 98°; and on the third day to 97·4°. The pulse fell, at the end of twenty-four hours, from 92 to 80, and thence to 70 on the third day.

Professor Ebstein has a paper in the *Berliner Klinische Wochenschrift*, 12th June, relating the history of two cases of diabetes, in the first of which carbolic acid and other remedies proved unsatisfactory, but salicylate of soda completely removed the diabetic symptoms, while in the second case there was considerable improvement from the same remedy.

Dr G. Parker May puts on record a case of endocarditis which was successfully treated by scruple doses of salicine in a mixture of glycerine water every fourth hour.—*Brit. Med. Journal,* 17th June.

Dr E. H. Jackson treats otorrhœa by first syringing the ear with tepid soft water. After the ear is thoroughly cleansed, a speculum is adjusted and two grains of salicine with four grains of calcined magnesia are blown into the ear through a quill; a small piece of cotton is then inserted. The process should be repeated every two or three days.—*Can. Med. Record,* June.

Mr J. A. Erskine Stuart states (*British Medical Journal,* 3d June) that he finds that a most characteristic catarrh of the mucous membrane of the nose and pharynx and mouth is set up by salicylic acid, whether it be given by the mouth or per rectum. He regards this as a valuable fact with reference to the treatment of diphtheria by this agent, as its beneficial effect in that disease must be both local and general. With reference to its irritant action on the stomach, he affirms that, although he took as much as two scruples at a dose, he never experienced the slightest discomfort in that organ.

According to the experiments of Mr Baden Benger, which he described at the recent meeting of the British Pharmaceutical Conference held at Glasgow, salicylic acid is not excreted in an active condition; the urine of patients taking salicylic acid exerting no retarding action on the production of essential oil of mustard or oil of bitter almonds, and not hindering in the slightest degree the action of half a grain of yeast on a solution of forty grains of sugar.

At the meeting of the British Pharmaceutical Conference at Glasgow, last September, Mr J. C. Hunter stated, as the result of his researches, that salicylic acid is more powerful to prevent the formation of infusive animalcules than either carbolic acid or creosote, when these are used in the same quantities as the salicylic acid and exposed to the same conditions.

Solution of Salicylic Acid.—The following is M. Cassans' formula:—

Salicylic. acid., ʒi.
Ammon. citratis, ʒss.
Spt. vin. gall., ℥i.
Aq. dest., ʒv.

The citrate of ammonia gives no unpleasant taste to the mixture.—*Bull. Gén de Thér.,* 30th April.

The following is Mr C. L. Mitchell's recipe for obtaining a concentrated solution of the acid :—

Salicylic. acid., ʒii.
Sodii biborat., ʒi.
Glycerine, q. s.

Mix the acid and borax with ʒiv. of glycerine, heat gently until dissolved, then add glycerine to make the measure ℥i. This solution contains 25 per cent. of salicylic acid. According to Mr Charles Becker, borax in the proportion of two parts to one part of the acid and fifty parts of water, precipitates slightly after twenty-four hours; a solution of one part each of acid and borax in five of glycerine and twenty-five of water is permanent, while the same proportion of borax, acid, and glycerine in fifty parts of water will precipitate in twenty-four hours. A solution of one part acid to two of borax in twelve of glycerine made with heat is permanent, but when one part of this solution is diluted with three of water, a cloudiness appears in three hours.—*American Journal of Pharmacy*, July.

The following is the formula recommended in *New Remedies*, July, for the solution of salicylic acid :—

Salicylic acid, ʒi.
Pot. acetatis, ʒi.
Glycerine, ʒi.
Water, q. s., ad ℥.

Mix and dissolve by shaking. This solution contains one grain of the acid in eight minims. It may be made much stronger. Acetate of lime, of soda, or of ammonia are also applicable as solvents.

Action of Gelsemium.—Dr Gray, of Meriden, Connecticut, states that he has never been disappointed with gelsemium as an agent for reducing temperature. He puts on record several cases illustrative of the beneficial influence of this drug in typhoid fever, in fever after perineal section for stricture, and in scarlet fever. Dr Gray thinks that the full effects are obtained by small frequently repeated doses—two drops of the tincture for an adult every hour until the fever abates, and then every two hours until free perspiration is induced—given thus, its reported ill effects on the heart and nerves are not produced. He generally combines bromide of potassium with it.—*New York Medical Record*, 10th June 1876.

Dr Burdon Sanderson shows that gelsemium exercises a remarkable influence on the respiration. When given in fatal doses, death takes place, as in poisoning by curare, by gradual arrest of the respiratory movements, but this is due not, as in the case of curare, to suspension of the functions either of the motor nerves or of the muscles to which they are distributed, but probably to a direct influence on the cerebro-spinal centres, particularly on those parts which preside over the rhythmical respiratory movements.—*Lancet*, 1st April.

Professor Sydney Ringer and Dr Murrell have published some additional observations on the action of gelsemium since our last report on that substance. To excite the symptoms characteristic of gelsemium they generally found it necessary to give drachm doses hourly, for three hours, of a tincture made with one part of the root to four of rectified spirit. Some individuals are much more prone to be affected by it than others. The following is the train of symptoms usually produced by the drug:—First, pain in the brows, followed soon by giddiness, then by pain in the eyeballs, and soon after by dimness of sight. A larger dose produces double vision without apparent squinting, with a sensation of great heaviness in the upper eyelids, with somewhat contracted pupils. A still larger dose causes drooping of the upper lid, sometimes extremely marked, so much so that the eye can be opened only by strong and painful effort. The patient next complains of weakness in the legs, but the authors did not push the drug beyond the production of this symptom. When well under the influence of the drug, the patient is pale, with a heavy sleepy look; patients complain of dryness of the mouth, though the tongue appears moist. The authors noticed that the eyes of rabbits became very prominent after poisoning with gelsemium; they dropped a solution of the alkaloid into the eye of a cat, and found that, though the pupil was widely dilated, prominence of the eyeball was not caused. Rabbits are much more susceptible to the drug than cats. The bulging of the eyeballs in the former animals is not due to asphyxia, as proved by experiment, and the writers therefore refer it to paralysis of the orbital muscles. Gelsemium paralyzes the muscles of the eyeballs, and hence the eyeballs become a little more prominent; asphyxia supervenes, causes congestion of the head, and then of the orbit; and as the muscles of this part are more or less paralyzed, the congestion of the vessels forces out the eyeball. Convulsions increase the congestion, and so contribute to the prominence of the eyes. Artificial respiration removes the congestion, and the eyeballs regain their natural position. The authors believe that gelsemium has an especial action on the eye-muscles, for (1) In man the eye is the first part attacked; (2) The prominence of the poisoned eye takes place before any general paralysis occurs; (3) When the eyes were very prominent, the animal could still quickly shut its eyelids, showing at least that the motor muscles of the eyeball are affected before and to a greater extent than the orbicular muscle. They found their opinion that it is the nerves that are affected, on the fact that the eye to which the poison has been applied protrudes first and is always the most prominent. If the poison were absorbed and acted on the centre of the motor nerves of the eye, both eyeballs would be equally affected; but, on the contrary, the poisoned eye bulges more than the other, hence it is probable that the drug poisons the terminations of the motor nerves of the eye, though the centre of these nerves may also be affected.

The effects of the local application of gelsemium to the rabbit's eye led the investigators to try the drug on the human subject. Wide dilatation of the pupils was produced, but no protuberance of the eyeball was observed. They state that their observations on man show that gelsemium paralyzes the sixth nerve first, for the external rectus is weakened before the other muscles, and it afterwards affects the third nerve, for the inward, upward, and downward movements of the eye are impaired, and ptosis is often marked. Strange to say, the internal administration of gelsemium produces an effect opposite to that occasioned by its local application with itself. When given by the mouth in doses sufficient to produce symptoms, in every instance but one it caused contraction of the pupil. The writers confirm the observation of Dr O. Berger, that dilatation of the pupils, in poisoned animals, occurs only when asphyxia from paralysis of respiration has set in, and that artificial respiration at once causes the pupils to contract. They find, as the result of five experiments, that the pupils decidedly contract before dilating when exposed to the topical action of the drug. That the contraction is not due to irritation was proved experimentally.—*Lancet*, 20th May, 15th July.

Ergot.—In the *Pharmaceutical Journal* for 17th June is an elaborate paper by Professor Dragendorff, relative to the isolation of the active principle and other constituents of ergot.

Professor Buchheim states that he has failed to isolate completely the active principle of ergot, and he thinks that for practical medical purposes the infusion of the freshly prepared extract will alone remain available. When ergotine is used for subcutaneous injections it should be freshly prepared, and ought to be carefully neutralized by carbonate of soda, as it contains much lactic acid, besides quantities of leucine.—*Klinische Wochenschrift*, quoted in *Pharm. Jl.*, 1st July.

(*a.*) *Ergot in Diarrhœa.*—A writer in the *New York Medical Record* affirms that he has obtained marked success with the fluid extract of ergot in the treatment of diarrhœa. He assumes that the drug causes contraction of the involuntary muscular fibres, and in so doing relieves the atony of the vessels of the intestinal mucous membrane and the consequent hyperæmia of the capillaries, and thus prevents the transudation of the watery portions of the blood. —Quoted in *Lancet*, 16th September.

(*b.*) *Ergot in Purpura.*—Dr Bulkley advocates the employment of ergot hypodermically in purpura. From 10 to 15 minims (or in exceptional cases 20 to 30 minims) of the fluid extract may be injected every hour and a half about the pectoral muscles or sides of the chest. Cleanliness of the syringe, slowness of injection, and depth of insertion should be observed. Dr Wey states that Dr Squibb's solution of aqueous extract (a minim representing a grain) is less irritating and less likely to produce abscesses than the ordinary fluid extract.—*New York Medical Record*, 1st July.

(*c.*) *Ergotine subcutaneously.*—In the *American Journal of Medical Science* for July, Dr R. Crockett has a short paper, in which he relates the successful treatment of subcutaneous injections of ergotine of a case of splenic leukæmia, an indurated mammary tumour, and a bronchocele. His injections consisted of 4 grains of ergotine dissolved in distilled water and glycerine, amounting to 15 minims.

(*d.*) *Ergot in Enlarged Spleen.*—Dr J. H. Miller records a case of greatly enlarged spleen which he succeeded in reducing by hypodermic injections of ergot after failure with quinine, iodine, chloride of ammonium, etc.—*New York Medical Record*, 15th April.

(*e.*) *Ergot in Prolapsus.*—Mr S. Giles (*Lancet*, 3d June) states that for more than four years he has used the liquid extract of ergot in nearly every case of prolapsus that has come under his care. He has found little or no benefit from this drug, except in cases where the prolapsus has come under treatment shortly after getting up from childbed—in fact, in cases where there is improper involution or laxity of the parts; in such cases the ergot treatment has been brilliant.

(*f.*) *Ergot in Uterine Catarrh.*—Dr Goreleitschenko (*St Petersburg Med. Wochens.*, 3d June) treats cases of uterine catarrh by pencilling the canal of the cervix uteri with solution of ergot (ergotine 2 scruples, water and glycerine of each 2 drachms), leaving the brush within the canal for from one to three minutes. In 22 out of 29 cases of chronic metritis attended with chronic catarrh so treated a cure was effected, but in the other cases the improvement which ensued was soon followed by relapse.

(*g.*) *Ergot in Fibrous Tumours of the Uterus.*—The *British Medical Journal*, 17th June, contains a leading article on the treatment of fibrous tumours of the uterus by ergot. Tumours which have become of a cartilaginous hardness, or masses of earthy matter, cannot be absorbed, nor can they be disintegrated by lack of nutrition. Again, the power of contraction in some tumours is almost gone. Tumours, however, of a single nucleus are generally very vascular, and the muscular fibres are hypertrophied as in pregnancy. These grow rapidly, and, at the same time, are most easily affected by ergot. In Dr Atthill's more recent cases the injection of ergot was not followed by the formation of sores. Instead of adding glycerine to the solution of ergot as recommended by Hildebrandt, he now employs a solution of one part of liquid extract of ergot (B. P.) in two of water, and of this he injects from 15 to 20 minims at a time; he always inserts the needle into the gluteus muscle, making it penetrate to the depth of more than an inch.—*Brit. Med. Jl.*, 2d Sept.

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